



1750

# TRANSMITTAL FORM

(to be used for all correspondence after initial filing)

Application Number	10/022,997
Filing Date	December 18, 2001
First Named Inventor	Rex Eugene Murray
Group Art Unit	1750
Examiner Name	Unassigned
Total Number of Pages in This Submission	8 (reference)
Attorney Docket Number	2001U014.US

## ENCLOSURES (check all that apply)

<input type="checkbox"/> Fee Transmittal Form	<input type="checkbox"/> Assignment Papers (for an Application)	<input type="checkbox"/> After Allowance Communication to Group
<input type="checkbox"/> Preliminary Amendment / Response	<input type="checkbox"/> Drawing(s)	<input type="checkbox"/> Appeal Communication to Board of Appeals and Interferences
<input type="checkbox"/> After Final Affidavits/declaration(s)	<input type="checkbox"/> Licensing-related Papers	<input type="checkbox"/> Appeal Communication to Group (Appeal Notice, Brief, Reply Brief)
<input type="checkbox"/> Extension of Time Request	<input type="checkbox"/> Petition Routing Slip (PTO/SB/69) and Accompanying Petition	<input type="checkbox"/> Proprietary Information
<input type="checkbox"/> Express Abandonment Request	<input type="checkbox"/> To Convert a Provisional Application	<input type="checkbox"/> Status Letter
<input checked="" type="checkbox"/> Information Disclosure Statement	<input type="checkbox"/> Power of Attorney, Revocation Change of Correspondence Address	<input checked="" type="checkbox"/> Additional Enclosure(s) (please identify below):
<input checked="" type="checkbox"/> 1449 Form	<input type="checkbox"/> Terminal Disclaimer	<u>Return Postcard</u>
<input checked="" type="checkbox"/> Copies of References	<input type="checkbox"/> Request for Refund	
<input type="checkbox"/> Certified Copy of Priority Documents)		
<input type="checkbox"/> Response to Missing Part/ Incomplete Application		

## REMARKS

## SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT

Firm Or Individual name	Osborne K. McKinney	Registration No.	40,084
Signature			
Date	August 16, 2002		

## CERTIFICATE OF MAILING

I hereby certify having information and a reasonable basis for belief that this correspondence will be deposited with the United States Postal Service as first class mail in an envelope addressed to: Honorable Commissioner for Patents, Washington, D.C. 20231 on this date: **August 16, 2002**

Typed or printed name	Tammy L. Hodges		
Signature		Date	August 16, 2002



# 4  
10/29/03  
"PATENT" *2w*

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICANT:	Murray, Rex E.	§	EXAMINER:	Unassigned
SERIAL NO.:	10/022,997 ✓	§	GROUP ART UNIT:	1750
FILED:	December 18, 2001 ✓	§	ATTY. DOCKET NO.:	2001U014.US
FOR:	Multimetallic Catalyst	§	DATE:	August 16, 2002
	Compositions for the	§		
	Polymerization of Olefins ✓	§		

Honorable Commissioner for Patents  
Washington, D.C. 20231

**INFORMATION DISCLOSURE STATEMENT**

Sir:

In accordance with Title 37, Sections 1.56, 1.97 and 1.98 of the Code of Federal Regulations, and pursuant to Applicant's duty of candor and good faith toward the United States Patent and Trademark Office, the Examiner's attention is drawn to the art indicated on the attached PTO-1449 form.

It is respectfully requested that the Examiner consider these documents and return an initialed copy of the PTO-1449 form to the undersigned attorney.

This disclosure statement should not be construed as a representation that a search has been made or that no other material information, as defined in 37 CFR § 1.56(a), exists.

A copy of each document is enclosed. Some of the documents may have markings thereon. No significance is meant to be attached to the markings.



10/022,997  
2001U014.US

We believe that this disclosure complies with the requirements of 37 CFR § 1.56, 1.97 and 1.98, and the Manual of Patent Examining Procedures § 609. If for any reason the Examiner finds that the disclosure or documents do not comply with these sections, notification is respectfully requested.

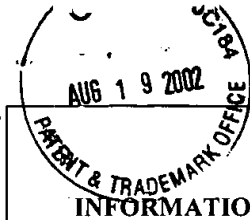
If there are any matters or issues outstanding, the Examiner is encouraged to contact the attorney of record at the telephone number listed below.

Respectfully submitted:

Osborne K. McKinney  
Attorney for Applicant  
Registration No. 40,084

Univation Technologies LLC.  
5555 San Felipe, Suite 1950  
Houston, TX 77056  
Telephone: (713) 892-3711  
Facsimile: (713) 892-3687

#4



# INFORMATION DISCLOSURE STATEMENT

(Use several sheets if necessary)

ATTY. DOCKET NO.

2001U014.US

SERIAL NO.

10/022,997

APPLICANT

Murray, Rex E.

FILING DATE

December 18, 2001

GROUP

1750

## U.S. PATENT DOCUMENTS

*EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
	AA	6,096,676	08/01/2000	Murray	502	117	
	AB	6,103,657	08/15/2000	Murray	502	155	

## FOREIGN PATENT DOCUMENTS

		DOCUMENT NUMBER	PUBL. DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION	
							YES	NO
	AC	EP 0 320 169 A2 ✓	14.06.89	Europe				
	AD	EP 0 349 886 B1 ✓	20.09.95	Europe				
	AE	EP 0 509 233 A2 ✓	21.10.92	Europe				
	AF	EP 0 761 694 B1 ✓	12.03.97	Europe				
	AG	EP 0 803 520 A1 ✓	29.10.97	Europe				
	AH	DE 42 02 889 A1 ✓	05.08.93	Germany				
	AI	WO 92/12162 ✓	23.07.92	PCT				
	AJ	WO 96/23010 ✓	01.08.96	PCT				
	AK	WO 96/23101 ✓	01.08.96	PCT				
	AL	WO 96/33202 ✓	24.10.96	PCT				
	AM	WO 97/02298 ✓	23.01.97	PCT				

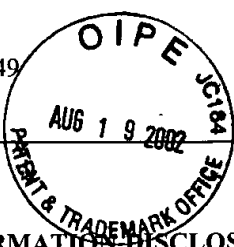
## OTHER DISCLOSURES (Including Author, Title, Date, Pertinent Pages of Publication, Etc.)

	AN	Gibson et al., "Synthesis and structural characterisation of aluminum imino-amide and pyridyl-amide complexes: bulky monoanionic N,N chelate ligands via methyl group transfer" <i>Journal of Organometallic Chemistry</i> 550, (1998) 453-456.
	AO	Fuhrmann et al., "Octahedral Group 4 Metal Complexes That Contain Amine, Amido, and Aminopyridinato Ligands: Synthesis, Structure, and Application in $\alpha$ -Olefin Oligo- and Polymerization" <i>Inorg. Chem</i> 1996, 35, 6742-6745 (Feb.).
	AP	George J.P. Briotovsek et al., "Novel Olefin Polymerization Catalysts Based on Iron and Cobalt" <i>Chem. Commun.</i> , 1998 849-850 (May).

EXAMINER

DATE CONSIDERED

\*EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next comment to applicant



## INFORMATION DISCLOSURE STATEMENT

(Use several sheets if necessary)

ATTY. DOCKET NO.

2001U014.US

SERIAL NO.

10/022,997

APPLICANT

Murray, Rex E.

FILING DATE

December 18, 2001

GROUP

1750

## U.S. PATENT DOCUMENTS

*EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
	BA						
	BB						

## FOREIGN PATENT DOCUMENTS

		DOCUMENT NUMBER	PUBL. DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION	
							YES	NO
	BC	WO 97/45434 ✓	04.12.97	PCT				
	BD							

## OTHER DISCLOSURES (Including Author, Title, Date, Pertinent Pages of Publication, Etc.)

BE	✓	Deelman et al., "Lithium Derivatives of Novel Monoanionic Di-N,N'-chelating Pyridyl- and Quinolyl-1-azaallyl Ligands" <i>Organometallics</i> 1997, 16, 1247-1252 (Aug.).
BF	✓	Deelman et al., "Novel monanionic di-N,N'-centered chelating ligands and the C <sub>1</sub> and C <sub>2</sub> symmetrical zirconium complexes" <i>Journal of Organometallic Chemistry</i> 513 (1996) 281-285 (Nov.).
BG	✓	Hitchcock et al., "Transformaton of the Bis(trimethylsilyl)methyl into Aza-allyl and β-Diketimato Ligands; the X-Ray Structures of [Li{N(R)C(Bu')CH(R)}] <sub>2</sub> and [Zr{N(R)C(Bu')CHC(Ph)N(R)}Cl <sub>3</sub> ](R = SiMe <sub>3</sub> )" <i>J. Chem. Soc., Chem. Commun.</i> (1994) 2637-2638 (Aug.).
BH	✓	Hitchcock et al., "Transformaton of the Bis(trimethylsilyl)methyl into a β-Diketimato Ligand; the X-Ray Structure of [Li(L'L')] <sub>2</sub> , SnCi(Me) <sub>2</sub> (L'L') and SnCi(Me) <sub>2</sub> (LL), (L'L' = N(R)C(Ph)C(H)C(Ph)NR, LL = N)H)C(Ph)NH, R - SiMe <sub>3</sub> )" <i>J. Chem. Soc., Chem. Commun.</i> (1994) 1699-1700 (May).
BI	✓	Clarke, et al., "Structural Investigations of the Dipyrromethene Complexes of Calcium(II), Nickel(II) and Copper(II)" <i>Inorganica Chimica Acta.</i> 166 (1989) 221-231 (Jun.).
BJ	✓	Tjaden et al. "Synthesis, Structures, and Reactivity of (R <sub>6</sub> -acen)ZrR' <sub>2</sub> and (R <sub>6</sub> -acen)Zr(R') <sup>+</sup> Complexes (R = H, F; R' = CH <sub>2</sub> CMe <sub>3</sub> , CH <sub>2</sub> Ph)" <i>Organometallics</i> 1995, 14, 371-386 (Jul.).
BK	✓	Corazza et al., "cis-and trans-Dichloro-derivatives of Six- and Seven-co ordinate Zirconium and Hafnium bonded to Quadridentate Schiff-base Ligands. Crystal Structures of [Zr(acen)Cl <sub>2</sub> (thf)], [M(salphen)Cl <sub>2</sub> (thf)] 0.5thf, [M(acen)Cl <sub>2</sub> , (M = Zr or Hf), and [Zr(msal)Cl <sub>2</sub> ] acen = N,N'-ethylenebis(acetylacetoneimine), salphen = N,N'-o-phenylenebis(salicylideneimine), msal = N-methylsalicylideneimine, and thf = tetrahydrofuran" <i>J. Chem. Soc. Dalton Trans.</i> (1990) 1335-1344 (Aug.).

EXAMINER

DATE CONSIDERED

\*EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 609. Draw line though citation if not in conformance and not considered. Include copy of this form with next comment to applicant



## INFORMATION DISCLOSURE STATEMENT

(Use several sheets if necessary)

ATTY. DOCKET NO.

2001U014.US

SERIAL NO.

10/022,997

APPLICANT

Murray, Rex E.

FILING DATE

December 18, 2001

GROUP

1750

## U.S. PATENT DOCUMENTS

*EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
	CA						
	CB						

## FOREIGN PATENT DOCUMENTS

		DOCUMENT NUMBER	PUBL. DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION	
							YES	NO
	CC							
	CD							

## OTHER DISCLOSURES (Including Author, Title, Date, Pertinent Pages of Publication, Etc.)

CE	Cozzi et al., "Oxazoline Early Transition Metal Complexes: Functionalizable Achiral Titanium(IV), Titanium(III), Zirconium(IV), Vanadium(III), and Chiral Zirconium(IV) Bis(oxazoline) complexes" Inorg. Chem (1995), 34, 2921-2930, (Dec.).
CF	Korine et al., "Bis(Trimethylsilyl)benzamidinate zirconium dichlorides. Active catalysts for ethylene polymerization" Journal of Organometallic Chemistry 503 (1995) 307-314 (Mar.).
CG	Gomez et al., "Mono- $\eta$ -cyclopentadienyl-benzamidinato chloro compounds of titanium, zirconium and hafnium" Journal of Organometallic Chemistry 491 (1995) 153-158 (Aug.).
CH	Flores, et al., "[N,N'-Bis(trimethylsilyl)benzamidinato]titanium and-zirconium Compounds. Synthesis and Application as Precursors for the Syndiospecific Polymerization of Styrene" Organometallics 1995, 14, 1827-1833 (Oct.).
CI	Dias et al., "N-Methyl-2(methylamino)troponimate Complexes of Tin(II), Gallium(III), and Indium(III). Syntheses of [(ME) <sub>2</sub> ATI] <sub>2</sub> Gal and [(Me) <sub>2</sub> ATI] <sub>2</sub> InCl Using the Tin(III) Reagent [(Me) <sub>2</sub> ATI] <sub>2</sub> Sn" Inorg. Chem. 1996, 35, 6546-6551 (Jun.).
CJ	Cotton et al., "Structural Studies of formamidine compounds: from neutral to anionic and cationic species" Polyhedron vol. 16 No. 3 pp. 541-550, 1997 (Apr.).
CK	Gornitzka et al., "Coordination of the Bis(pyridyl)methyl Substituent to Group 1 and 13 Metals" Organometallics 1994, 13, 4398-4405 (May).
CL	Roesky et al., "Benzamidnatokomplexe mit Haupt- und Nebengruppen-Elementen - Strukturen von PhC(NSiMe <sub>3</sub> ) <sub>2</sub> TiCl <sub>2</sub> and PhC(NSiMe <sub>3</sub> ) <sub>2</sub> MoO <sub>2</sub> " Chem. Ber 121, 1403-1406 (1988) (Feb.).

EXAMINER

DATE CONSIDERED

\*EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next comment to applicant



## INFORMATION DISCLOSURE STATEMENT

(Use several sheets if necessary)

ATTY. DOCKET NO.

2001U014.US

SERIAL NO.

10/022,997

APPLICANT

Murray, Rex E.

FILING DATE

December 18, 2001

GROUP

1750

## U.S. PATENT DOCUMENTS

*EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
	DA						
	DB						

## FOREIGN PATENT DOCUMENTS

		DOCUMENT NUMBER	PUBL. DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION	
							YES	NO
	DC							
	DD							

## OTHER DISCLOSURES (Including Author, Title, Date, Pertinent Pages of Publication, Etc.)

DE	✓	Cloke et al., "Zirconium Complexes incorporating the New Tridentate Diamide Ligand $[(Me_3Si)N\{CH_2CH_2N(SiMe_3)_2\}_2]^{2-}$ (L); the Crystal Structures of $[Zr(BH_4)_2L]$ and $[ZrCl\{CH(SiMe_3)_2\}L]$ " J. Chem. Soc. Dalton Trans 1995 25-30 (Jul.).
DF	✓	Linden et al., "Polymerization of $\alpha$ -Olefins and Butadiene and Catalytic Cyclotrimerization of 1-Alkynes by a New Class of Group IV Catalysts. Control of Molecular Weight and Polymer Microstructure via Ligand Turning in Sterically Hindered Chelating Phenoxide Titanium and Zirconium Species" J. Am. Chem. Soc. 1995, 117, 3008-3021 (Jul.).
DG	✓	Brand et al. "Facile Reduction of a Dialkyl Zirconium(IV) Octaethylporphyrin (OEP) Complex by $H_2$ : Crystal Structure and Spectroscopic Characterization of $[(OEP)ZrCH_2SiMe_3]$ " Angew. Chem. Int. Ed. Engl. 1994 33, No.1 95-97 (Jul.).
DH	✓	Solari et al., "Functionalized 5,5,10,10,15,15,20,20-Octaethylporphyrinogen Complexes of Early Transition Metals: Synthesis and Crystal Structure of Titanium-, Vanadium- and Chromium- (III) Derivatives and a Two-electron Oxidation of the Porphyrinogen Skeleton" J. Chem. Soc. Dalton Trans 1994 2015-2017 (Apr.).
DI	✓	Uhrhammer et al., "Cationic d' Metal Alkyls Incorporating Tetraaza-Macrocyclic Ancillary Ligands. Synthesis and Reactivity of $(Me_3taa)M(R)^+$ and $(Me_4taen)M(R)^+$ ( $M = Zr, Hf$ ) Complexes" J. Am. Chem. Soc. 1993, 115, 8493-8494 (Apr.).
DJ	✓	Giannini, et al., "Tetraaza[14]annulenezirconium (iv) Complexes with Butadiene Ligands and their Relationship with Bis(cyclopentadienyl)zirconium(IV) Complexes." Angew. Chem. Int. Ed. Engl. 1994, 33 No. 21 (May).
DK	✓	Kol, et al., "Synthesis of Molybdenum and Tungsten Complexes That Contain Triamidoamine Ligands of the Type $(C_6F_5NCH_2CH_2)_3N$ and Activation of Dinitrogen by Molybdenum" J. Am. Chem. Soc. 1994, 116, 4382-4390, (Oct.).
DL	✓	Bei et al., "Synthesis, Structures, Bonding, and Ethylene Reactivity of Group 4 Metal Alkyl Complexes Incorporating 8-Quinolinolato Ligands" Organometallics 1997, 16, 3282-3302 (Mar.).

EXAMINER

DATE CONSIDERED

\*EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next comment to applicant



## INFORMATION DISCLOSURE STATEMENT

(Use several sheets if necessary)

ATTY. DOCKET NO.

2001U014.US

SERIAL NO.

10/022,997

APPLICANT

Murray, Rex E.

FILING DATE

December 18, 2001

GROUP

1750

## U.S. PATENT DOCUMENTS

*EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
	EA						
	EB						

## FOREIGN PATENT DOCUMENTS

		DOCUMENT NUMBER	PUBL. DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION	
							YES	NO
	EC							
	ED							

## OTHER DISCLOSURES (Including Author, Title, Date, Pertinent Pages of Publication, Etc.)

	EE	Tsukahara, et al., "Neutral and Cationic Zirconium Benzyl Complexes Containing Bidentate Pyridine-Alkoxide Ligands. Synthesis and Olefin Polymerization Chemistry of (pyCR <sub>2</sub> O) <sub>2</sub> Zr(CH <sub>2</sub> Ph) <sub>2</sub> and (pyCR <sub>2</sub> O) <sub>2</sub> Zr(CH <sub>2</sub> Ph) <sup>+</sup> Complexes" Organometallics 1997, 16, 3303-3313 (Mar.)						
	EF	Kim et al., "Synthesis, Structures, Dynamics, and Olefin Polymerization Behavior of Group 4 Metal (pyCAr <sub>2</sub> O) <sub>2</sub> M(NR <sub>2</sub> ) <sub>2</sub> Complexes Containing Bidentate Pyridine-Alkoxide Ancillary Ligands" Organometallics 1997, 16, 3314-3323 (Mar.)						
	EG	Durfee et al., "Formation and Characterization of η <sup>2</sup> -Imine and η <sup>2</sup> -Azobenzene Derivatives of Titanium Containing Ancillary Aryloxy Ligand" Organometallics, vol. 9, No. 1, 1990, pp 75-80, (Jan.).						
	EH	Lappert et al., "Recent studies on metal and metalloid bis(trimethylsilyl) methyls and the transformation of the bis(trimethylsilyl)methyl into the azaallyl and β-diketiminato ligands" Journal of Organometallic Chemistry 500, (1995) 203-217, (Sep.).						
	EI							
	EJ							
	EK							
	EL							
	EM							
	EN							

EXAMINER

DATE CONSIDERED

\*EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next comment to applicant